## REMARKS/ARGUMENTS

The present response is intended to be fully responsive to the rejection raised in the Office action, and is believed to place the application in condition for allowance. Further, the Applicants do not acquiesce to any portion of the Office Action not particularly addressed. Favorable reconsideration and allowance of the application is respectfully requested.

In the Office action, the Office noted that claims 1-5 are pending and rejected. Applicants, respectfully, traverse the rejection and submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. § 103 and all the claims now pending comply with the requirements of 35 U.S.C. § 101. Thus, Applicants believe that all of these claims are in condition for allowance.

## REJECTION

### Applicant's Response to the 35 U.S.C. § 101 Rejection of claims 1-5

Office rejected claims 1-5 under 35 U.S.C. § 101. Office indicated that claims 1-5 are directed to non-statutory subject matter. Applicants amend claim 1 to recite a method "of a digital signal processor." Hence, Applicants request reconsideration and withdrawal of the rejection.

### Applicant's Response to the 35 U.S.C. § 103(a) Rejection of claims 1-5

The Office rejected claims 1 and 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,653,234 issued to Kim et al. (hereon after "*Kim*") in view of U.S. Patent No. 5,735,797 issued to Muzilla et al. (hereon after "*Muzilla*") further in view of U.S. Patent No. 6,859,659 issued to Jensen et al. (hereon after "*Jensen*").

In the Office Action, the Office insinuated that the combination of *Kim*, *Muzilla* and *Jensen* discloses all the elements recited in claim 1. In support of the rejection, the Office indicated that "[i]t would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Kim's filtered image of fig. 2, num 114 of obtaining a velocity measure with Muzilla's teaching of obtaining a velocity measure represented in Muzilla in fig. 9 as VELDATA based on interpolating in fig. 9, num

124A, because Muzilla's teaching provide a visual display of flow data such as velocity instead of just obtaining velocity as done in Kim." *Office Action*, at page 5. In addition, the Office indicated that "[i]t would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Kim's typically autocorrelation with Jensen's teaching of traditional autocorrelation with the new autocorrelation, because Jensen's new autocorrelation is 'new and improved'." *Id.*, pages 5-6. Applicants respectfully disagree.

Claim 1 has been amended to specifically recite a combination of elements directed to a method of image filtering that includes "computing a modified auto-correlation in a horizontal direction for each pixel in an image, wherein the modified autocorrelation coefficient is computed in horizontal direction near a pixel of interest utilizing:

$$\rho = R_{xx}(1)/(R_{xx}(0)+\delta)$$

wherein a negative modified autocorrelation coefficient indicates a spectrum distribution is around high frequency region and a positive modified autocorrelation coefficient indicates a spectrum distribution is around a low frequency region; (b) filtering said image with a lowpass filter, wherein said filtering adaptively changes according to the computed modified auto-correlation by applying said filtering to regions with the positive modified autocorrelation coefficient and applying a low pass filter according to intensity, wherein the filtering intensity is proportional to $(\rho - \rho_{th})$, where $\rho_{th}$ is a user defined parameter; and (c) interpolating said image and said filtered image from step (b) wherein said interpolating at said each pixel depends upon said modified auto-correlation." [Emphasis added].

*Kim* discloses an "apparatus and method for removing noise from a signal… by filtering S9x) through a low pass filter having an adjustable pass band…." *Kim*, at Abstract. *Muzilla*, on the other hand, discloses an "ultrasound imaging system fir displaying edge-enhancement topographic flow power data surrounding by B-mode anatomic data without masking out any significant edge-enhanced topographic flow power data and without displaying any significant flow power background noise." *Muzilla*, at Abstract. Conversely, *Jensen* discloses a method and apparatus for "estimating the velocity vector of remotely sensed object or group of objects using wither ultrasound or electromagnetic radiation." *Jensen*, at Abstract.

*Kim, Muzilla* and *Jensen*, alone and in combination, are devoid from disclosing "computing a modified auto-correlation in a horizontal direction for each pixel in an image, wherein the modified autocorrelation coefficient is computed <u>in horizontal direction near a pixel of interest</u> utilizing:

$$\rho = R_{xx}(1)/(R_{xx}(0)+\delta)$$

<u>wherein a negative modified autocorrelation coefficient indicates a spectrum distribution is around high frequency region and a positive modified autocorrelation coefficient indicates a spectrum distribution is around a low frequency region</u>; (b) filtering said image with a lowpass filter, wherein said filtering adaptively changes according to the computed modified auto-correlation <u>by applying said filtering to regions with the positive modified autocorrelation coefficient and applying a low pass filter according to intensity, wherein the filtering intensity is proportional to $(\rho - \rho_{th})$,</u> where <u>$\rho_{th}$ is a user defined parameter</u>; and (c) interpolating said image and said filtered image from step (b) wherein said interpolating at said each pixel depends upon said modified auto-correlation," as recited in claim 1. Hence, Applicants request reconsideration and withdrawal of the rejection to claim 1.

Jensen I, Jensen II, Kim II (US patent 5,544658) and Hall where mentioned with respect to dependent claims 2-5. Since claims 2-5 depend from amended claim 1 and include all the limitation of amended claim 1, Applicants submit that *Kim, Muzilla, JensenI, JensenII, Kim II* and *Hall*, alone and in combination, do not teach all the elements of claim 1-5, Thus, Applicants submit that claims 1-5 meet the requirements of 35 U.S.C. § 103(a) and are in condition for allowance. Applicants respectfully request reconsideration and withdrawal of the rejection to claims 1-5.

## CONCLUSION

In view of the foregoing, the Applicants submit that none of the claims presently in the application are obvious under the provisions of 35 U.S.C. § 103(a). Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Office believes that any unresolved issues still exist or if, in the opinion of the Office, a telephone conference would expedite passing the present application to issue, the Office is invited to call the undersigned attorney directly at 972-917-4365 or the office of the undersigned attorney at 972-917-5651 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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